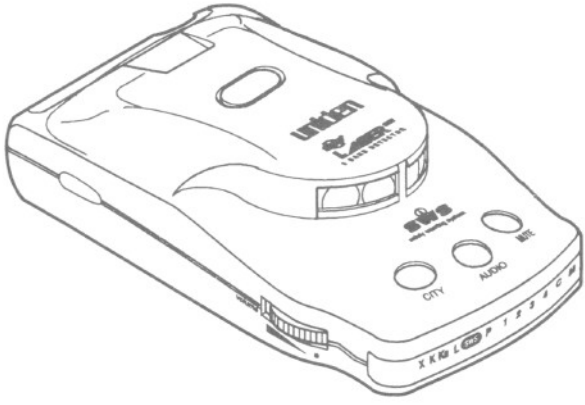
uniden®

SWS 2500NZ

Operating Guide



SAFETY FIRST

Congratulations on the purchase of your new Uniden SWS 2500 NZ radar detector which has been engineered specifically for New Zealand conditions. This model features the newest technology designed for Radar, Laser and Safety Warning System detection and alert.

You should be aware that Safety Warning transmitters (the device that sends your detector safety warning alerts) may not be available for use in New Zealand at this time.

While this detector is designed to warn you of road hazards, it is not designed as a substitute for safe, attentive driving procedures. We encourage you to remain alert for road hazards and always obey the posted speed limit and driving regulations at all times. Of course, this includes ensuring that seat belts are worn at all times and that you never drink and drive.

Contents

Introduction 1
Feature Highlights 1
Speed Detection Systems 2
Radar 2
Laser 3
Included with Your Radar Detector 4
Controls and Functions 5
LED Displays 7
Installation 9
Helpful Tips 9
Adjusting the Windshield Mounting Bracket 10
Connecting the Power 11
Using the Coiled Cigarette lead 11
Direct Connection 12
Replacing the Fuse 13
Operation 14
Power On 14
Volume Control 14
Full Warning 15
Audio Alert Only Operation 15
Visual Alert Only Operation 16
Auto Mute Operation 16
X Band Delete Mode 16
City Operation 17
Memory Retention Feature 17
LED Signal Strength Meter in City Mode 18
Safety Warning System Operation 18
Care and Maintenance 19
Troubleshooting 20
Specifications 21
Optional Accessories & Replacement Parts 22
Warranty 23

Features, Specifications, and availability of Optional Accessories are all subject to change without notice.

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Introduction

Welcome to the world of sophisticated, early warning laser/radar detection. You have purchased one of the most advanced laser/radar detectors available. The SWS2500NZ is a complete integrated laser/radar detector. It responds not only to the X-, K-, and Ka-SuperWideband radar in use today, but also provides 360° detection of the other latest speed monitoring system — the laser gun. The built-in Safety Warning System (SWS™) is capable of detecting a hazardous warning signal transmitted on the K-band.

The SWS2500NZ provides distinct visual and audio alerts to warn you of the presence of X-, K-, and Ka-SuperWideband radar signals as well as IR laser signals. You can drive with confidence when you bring along the SWS2500NZ.

The SWS2500NZ employs Super Stalker Technology (SST); a state of the art electronic system designed to make this radar detector invisible to all current VG-2 radar detector detectors. The SWS2500NZ also uses the new D.R.O. (Dielectric Resonant Oscillator) and E.D.I.T. (Electronic Data Interference Terminator) circuitry; giving more reliable performance.

We are certain that you will enjoy the SWS2500NZ, and to ensure that you get the most from its features, please read this Operating Guide carefully before installing and operating the unit.

Feature Highlights

- 360° Laser Detection
- 5 Band Coverage
- Super Wideband
- K/Ka Priority
- Signal Strength Meter
- Visual/Audio Only Mode
- City and Highway Modes
- Engineered for New Zealand Conditions
- User Selectable X Band Delete
- Safety Warning System™
- 5 Alarm Tones
- VG-2 Undetectable
- Pulse Detection
- Warning Lights
- Auto Mute Mode
- Self Test
- Edit Circuitry

Speed Detection Systems

A speed detection device (often called a radar gun) sends out either a microwave signal or beam of light. When this signal reaches its target, part of the signal is reflected or bounced back toward the emitting gun. The time required for the signal to leave the gun, bounce off an object, and return is used to determine a vehicle's distance and speed.

Radar

Radar (Radio Detection And Ranging) is a microwave system for detecting the speed of moving objects by reflected pulses of high frequency radio waves. There are 3 radar bands (microwave frequencies): X band (10.49 to 10.56 GHz), K band (24.04 to 24.26 GHz), and the "superwide" Ka band (33.4 GHz to 36 GHz).

The X band was the first used for traffic. Next came the K band which is harder to detect. (Most instant-on radar is K band.) The Ka band was introduced in 1987, and widened to Ka SuperWideband in 1990. The SWS2500NZ monitors all current radar bands including the entire Ka SuperWideband.

The radar beam is cone shaped — the narrower the beam, the greater the resolution. A moving vehicle reflects radar signals back towards the radar gun. The SWS2500NZ can detect the signals emitted by radar guns, and it will sound an audio alarm and flash a warning indicator.

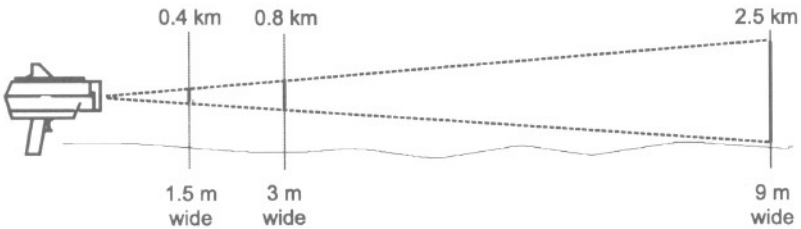
For continuously transmitting radar, use the SWS2500NZ to get accurate detection from a safe distance. As the first weak signals are detected, the alarm sounds intermittently. As the signal gets stronger (the closer it gets), both alarms increase in intensity.

Instant-on transmitters fire a short radar pulse beam at a vehicle and instantly read its speed. When detected at a distance, you will hear a few beeps and see the sterength meter begin to light. Instant-On radar signals are the most difficult to detect at a safe distance because they are transmitted only when directed at you or the vehicle directly ahead of you.

Laser

The Laser Speed Detection System, also called LIDAR (for Light Detection and Ranging), uses a laser gun that emits infrared light pulses just outside the spectrum of visible light. Each reflected pulse measures the speed of the object coming toward or going away from the laser gun.

Unlike radar, the laser gun emits a very narrow beam of light, so it can pinpoint a speeding car within traffic. The infrared beam spreads out, but slower over a longer distance than a radar signal.

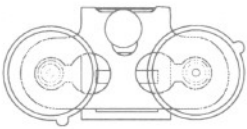


The laser gun can acquire a speed reading as quickly as 0.3 seconds, sometimes less. However, since it isn't easy to accurately aim at and hit a moving target, an operator often moves the laser gun in several directions to get a reading. So laser signals are emitted continuously for a few seconds for each speed measurement. The SWS2500NZ can detect these light pulses from as far away as 2.5 km, which is about four times the effective range of a laser gun (625 m), and about ten times its average operating range (150-250 m).

Note: *To be safe, do not ignore any warnings. Although there are other types of radar signals that may cause interference, when the SWS2500NZ detects a signal, be on the alert. It is important to exercise caution at all times.*

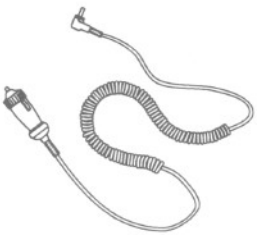
Included with Your Radar Detector

Owner's Guide

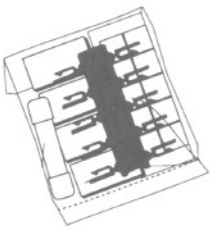


RDA640
Windshield
Bracket

RDA248
Hard Wire Lead



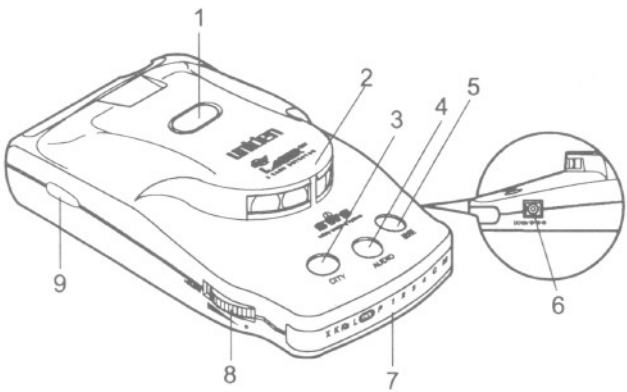
RDA252
Coiled Cigarette
Lead



Fuses and
Spare Parts

If any items are missing or damaged, contact your dealer immediately.

Controls and Functions



1. **Clip Release** — Press the clip release button to remove the SWS2500NZ from the windshield mounting clip.

2. **Rear and Side Laser Detector Lenses** — For rear and side detection of laser signals.

3. **CITY Button** — Press the CITY button to help reduce X-band false alarms while driving in the city. When you turn on the City Mode, the City indicator turns on. While driving on highways, turn off the City Mode for long-range detection.

4. **AUDIO Button** — Press the AUDIO button to activate the Audio Alert Only operation. All the LEDs dim, and the signal strength meter is disabled.

   Note; *To operate with visual alert only, set the volume control to the minimum. Remember though, that if the volume control is turned down and Audio Only operation is selected, the alarm features are completely disabled.*

5. **MUTE Button** — Press the MUTE button to activate the Auto Mute feature (which produces full alert level when a signal is first received, then automatically reduces to half volume for the rest of the warning.

6. **DC 12V Power Input** — Connect the DC power cord here.

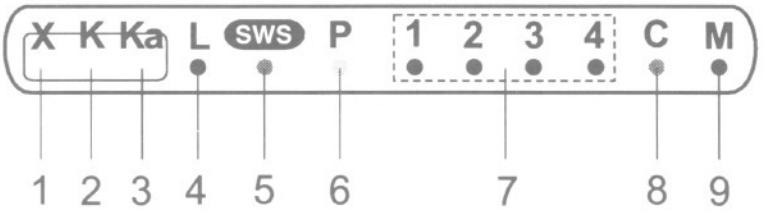
   Note; *Use only a Uniden® supplied power cord or its replacement.*

7. **LED Display** — LEDs display visual alerts, signal strength, and operation mode.

8. **On-Off/Volume Control** — Turns the power on and adjusts the Audio Alert volume.

9. **Speaker** — Sounds audio alert. There are five different audio alert tones to distinguish each band of radar signal and laser signal received.

LED Displays



1. **X-Band Signal Indicator** — A green LED lights and blinks to indicate the presence of an X-band radar signal. The blink rate increases as the radar source gets closer. A distinct audio alert is also heard.

2. **K-Band Indicator** — An amber (orange) LED lights and blinks to indicate the presence of a K-band radar. The blink rate increases as the radar source gets closer. A distinct audio alert is also heard.

3. **Ka-SuperWideband Signal Indicator** — A red LED lights and blinks to indicate the presence of a Ka-SuperWideband radar signal. The blink rate increases as the radar source gets closer.
A distinct audio alert is also heard.

4. **Laser Signal Indicator** — A red LED under L lights and blinks to indicate the presence of a laser signal. A distinct audio alert is also heard.

5. **SWS Signal Indicator** — When an early warning hazard or informational signal is detected, the yellow SWS LED begins to blink. A distinct audio alert is also heard.

6. **Power-On Indicator** — A green LED under P lights to indicate power is being supplied to the unit and the unit is turned on. An amber LED under P lights to indicate power is being supplied to the unit and also X band is deleted.

7. **LED Signal Strength Meter** — Four LEDs give an accurate visual indication of the strength of radar or laser signals.

8. **City Mode Indicator** — A green LED under C lights to indicate that you selected City Mode.

9. **Auto Mute Indicator** — A red LED under M lights to indicate that you selected the Auto Mute feature.

Note: *Every time you turn on the SWS2500NZ, a self-test is performed for all LEDs and Alert tones. You will hear in-order five distinct tones for the X-, K-, and Ka-SuperWideband radar bands as well as for SWS and laser. (X Band will not be tested if switched off)*

Installation

The SWS2500NZ uses a highly sensitive horn-type antenna and IR laser sensor to receive radar/laser signals. Its sensitivity and range depend on the method of installation and the direction of the antenna/sensor in relation to the signal source. The inherent nature of radar waves makes them reflect off metallic surfaces. That is why radar waves are so useful for measuring the speed of a vehicle. The IR laser light may reflect only from shiny surfaces. Both radar waves and IR laser light will, however, pass through plastic or glass.

Before you decide where to put your radar detector, please keep in mind these two important factors:

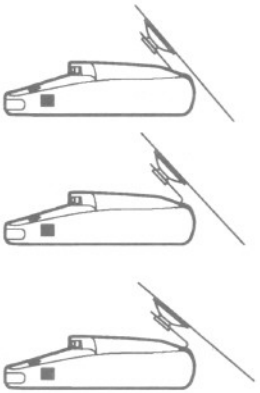
- For safety, do not mount the SWS2500NZ in a location where it will obstruct your driving vision.
- Most vehicles have the top part of the windshield tinted. Mounting the SWS2500NZ behind tinted or mirrored glass may reduce the effectiveness of laser detection by reducing the amount of laser light received by the Detector.

Helpful Tips

The antenna and forward looking sensor are located behind the rear panel of the unit, (and the rear-and side-looking sensors are located on top of the unit), directly behind the mode selection keys. The antenna and sensors should not be obstructed by metal or metallic surfaces and should be pointed at the horizon for accurate long-range detection.

- Do not mount the unit behind the windshield wiper blades, radio antenna, tinted glass area, or mirrored glass. Be sure the unit is free from obstruction by seat backs, rear view mirror, sun visors, or the ceiling of the automobile.
- Do not mount the unit in front of the heater or defroster vents.
- Do not leave the unit in direct sunlight or in the glove compartment of a closed car for long periods of time, as extreme changes in temperature may cause internal damage. Also, removing the unit from the windshield makes you less susceptible to break-in and theft.

Adjusting the Windshield Mounting Bracket



1. The metal portion of the bracket locks into the plastic portion at three different positions. These positions can be used for vehicles with different vertical angles of their windshields. The back position can be used for vehicles with windshields that are slanted back.

2. For optimum laser detection, bend the angled portion of the windshield mounting bracket so that the SWS2500NZ is parallel to the road surface. Be sure the SWS2500NZ is mounted so it is free of obstructions from seat backs, rear view mirror, sun visors, or the ceiling of the automobile. There must be a clear 360° line of sight to the outside of the vehicle.

To mount the SWS2500NZ:

1. Insert the windshield bracket into the SWS2500NZ.

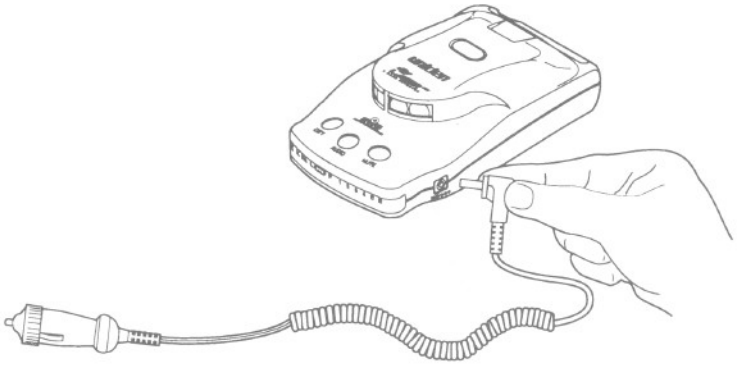
2. Place the bracket and the SWS2500NZ in the proper location on the windshield of your vehicle, and press the suction cups firmly against the windshield.

Connecting the Power

Using the Coiled Cigarette lead

The SWS2500NZ is designed to operate on most 12 VDC negative ground vehicle electrical systems. The power cord provided with the unit has a cigarette lighter socket plug at one end and a small connector at the other.

1. Insert the small connector into the jack on the side of the unit.



2. Insert the other end into the cigarette lighter socket of your vehicle.

When installing the power cord, make sure that:

- The socket is clean to allow proper contact
- The power cord does not block the antenna area on the back of the unit.

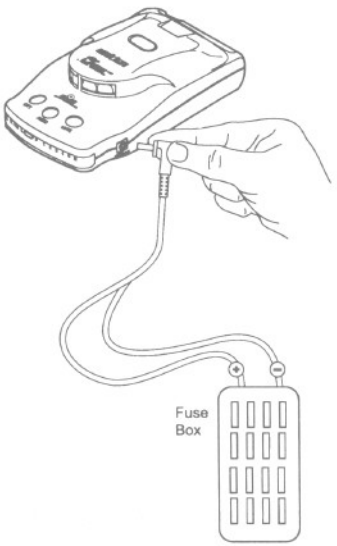
Your unit also comes with ten power cord mounting clips. You can use these clips to attach the power cord to the window frame or other parts of the vehicle, keeping it neat and out of the way. Use the double-sided foam tape squares to attach each clip. Slip the power cord into the clip to hold it securely in place.

Direct Connection

Warning: *The SWS 2500NZ is designed to operate only with 12V DC, negative ground power systems. Operation of the unit on other voltages or polarities will cause damage to the unit and may create a fire hazard.*

The hard wire lead provided with the unit has bare wires at one end, and a small connector at the other end.

1. Connect the positive rod wire to a 12V DC source in your vehicle's fuse box.
2. Connect the other wire to ground.
3. Run the cord from the fuse box to the SWS 2500NZ.



Note: *Ensure the cord does not interfere with vehicle operation or cause a iripping hazard.*

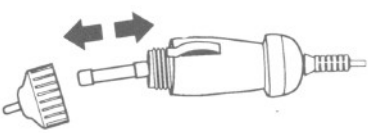
4. Plug the power cord connector into your radar detector at the jack labeled "DC 12V".

Replacing the Fuse

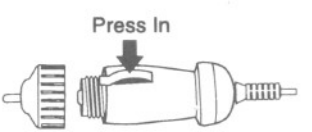
The cigarette lighter plug contains a 1-ampere fuse to protect it from power surges.

1. To replace the fuse, unscrew the top of the plug.

2. Remove the fuse and replace it with the same type.



3. To replace the top, push in the two metal contacts and twist into place.



Note: *Your SWS2500NZ comes with an extra fuse.*

Operation

You are now ready to enjoy the convenience and security of your SWS2500NZ. Please read this section of the Operating Guide carefully to familiarise yourself with the basic operation of this unit.

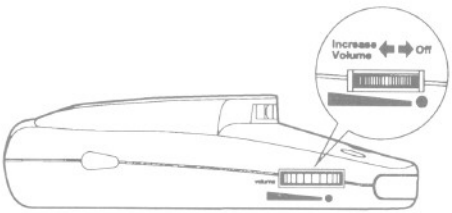
Power On

Turn the Volume control to switch on the power. When you power up the SWS2500NZ, it performs a self-test of all its circuits. This test takes about 5 seconds, during which you will hear five distinct alarm tones and see all the LEDs. First, you will hear the X-band alarm for 2 seconds while the X signal indicator, City, Audio, and Mute LEDs light. The test also checks the meter LEDs. It is best to adjust the audible alarm during this period. Then you will hear the K-band alarm, Ka-SuperWideband alarm, Laser alarm and safety alert for 1 second each while the corresponding signal indicator LED lights. (The P LED remains on until you turn off the unit.)

After the SWS2500NZ confirms proper operation, the alert tones and all LEDs, except the Power LED, turn off. If the Power LED does not light, check the cigarette lighter socket connection. If the unit turns on and off intermittently, or the alert tone sounds too often for no reason, check the power cord connection at both ends to be sure it is not loose.

Volume Control

Adjust the Volume control to a comfortable alarm tone level for your vehicle. The volume level does not have any effect on the unit sensitivity.

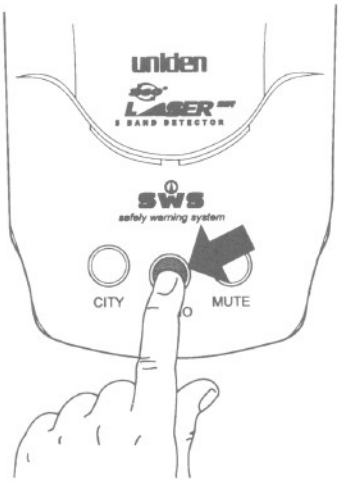


Full Warning

When the SWS2500NZ detects a radar, laser, or safety warning signal, it emits a distinct warning tone and the corresponding alert LEDs (X, K, Ka, L, or SWS) will light and blink. The blink rate of the LEDs increases and the signal strength meter LEDs light successively as the signal source comes closer.

Audio Alert Only Operation

Press the AUDIO button for Audio Alert Only operation.



When the Audio Only is selected, the visual alert and signal strength meter are disabled. In this mode, all lighted LEDs will dim. Press the AUDIO button again for the Full Alert (audio and visual) Mode. (Do not set the Volume control at minimum when in Audio Alert Only because there will be no warning.)

Note: *The audio alert tones for the 3 radar bands and laser are all different.*

Visual Alert Only Operation

You can operate the SWS2500NZ in Visual Alert Only by setting the Volume control at the minimum position in Full Alert Mode. At this setting you can barely hear the audio alert in a quiet environment. Be sure that the Audio Alert Only indicator is off.

Auto Mute Operation

Press the Mute button to activate the Auto Mute feature.

When the Mute indicator is on, the unit is in Auto Mute Mode. In this mode you hear the full audio alert when a signal is first received. The audio alert automatically reduces to half volume for the duration of the warning.

X Band Delete Mode

X Band Delete mode is indicated by the power LED glowing amber. X Band Delete will completely disable X Band Detection and Warning. Press the city button to toggle through (City on, X Band on), (City off, X Band off), (City on, X Band off) and (City off, X Band on).

City Operation

In highly populated areas, you may encounter many devices that use the same frequencies as radar signals, such as motion detectors, automatic doors, and intrusion alarms. These devices may trigger an alert called "falsing".

To filter most of the weaker signals and get the most accurate radar signal recognition, press CITY to turn on the City Mode.

The City indicator lights.

In City Mode, the combination of visual and audio alert tones varies based on the strength of the received signal.

Note: If you use both Audio Only Alert and City modes, you won't receive an alert until you are very close to the radar source. If the power light glows amber, the detector will not provide any audible or visible 'X' Band warning.

Memory Retention Feature

The memory retention feature retains operational settings in memory for at least 2 days without power, when you turn on the SWS2500NZ, it will be in the same mode as when you turned off.

LED Signal Strength Meter in City Mode

The LED signal strength meter gives you instant information about the strength of the signal being detected. A weak signal causes the first LED to light. As signal strength increases, more LEDs light. All four LEDs light when full signal strength is received. Use this meter to judge the distance from the signal source.

Signal Strength	X-, K-, Ka-Super Wide Band, SWS	Laser
●○○○	Visual	Visual/Audio
●●○○	Visual	Visual/Audio
●●●○	Visual/Audio	Visual/Audio
●●●●	Visual/Audio	Visual/Audio

Safety Warning System Operation

The Safety Warning System (SWS™) is a new communication system that will provide an early warning when a road hazard exists. The SWS2500NZ is capable of detecting the SWS signal broadcast on the K-band by either law enforecement or local departments of transportation. The yellow SWS LED blinks, while an audible alert sounds. When this alert sounds, you should tune to local radio traffic reports and prepare to slow down or stop your vehicle because you could be approaching an accident, bad road conditions caused by weather, or road crews or construction.

Care and Maintenance

The SWS2500NZ is designed to give you years of trouble-free service. There are no user-serviceable parts inside, and except for the fuse, no maintenance is required. To keep your detector in new condition, follow these important suggestions:

- Never leave the SWS2500NZ on the windshield when you park your vehicle. The temperature in the vehicle in summer can reach levels above what is considered to be safe for this unit.
- To make you less susceptible to break-in and theft, remove the unit from your windshield when you leave your vehicle.
- Do not expose the unit to moisture. Rain, dew, road splash, or other liquids can damage the internal components and reduce sensitivity of the SWS2500NZ.

Troubleshooting

If your SWS2500NZ does not perform up to expectations, try the suggestions listed below. If you cannot get satisfactory results, contact your local retailer or Uniden (NZ) LTD for assistance.

Unit does not operate: (Power LED not on)	• Check the power cord. Be sure the connectors are properly installed. • Be sure ignition key is ON or in the accessory position. • Fuse blown. Check and replace. • Check power to lighter socket. • Vehicle electrical problem exists. • Make sure that the volume control is in the ON position. • Clean cigarette lighter socket.
Unit fails the self test.	• Return to your retailes.
Weak detection.	• Check angle of unit. • Antenna/Sensor is obstructed. Relocate the unit clear of any obstruction outside the windshield, such as a wiper blade. • Relocate the unit clear of the window tint.
Inaccurate or erratic detection:	• Loose power cord. Check both connectors. • Power cord is broken. Check and replace.
Beeps over bumps or rough road.	• Check that the power cord is connected at both ends. • Clean cigarette lighter socket.
Beeps at same location. Signal strength meter registers, but no audio.	• Falsing because you have passed a motion sensor or alarm. • For Highway use, be sure City Mode is OFF. • Increase the volume.
The unit bounces against the windshield.	• Reposition so that the bumpers are firmly against the windshield.
No X Band Detection	• X Band delete mode has been selected. Power light glows amber. • Refer to page 16 for more details.
Beeps when vehicle approches	• False alarm caused by another rader detector in closer proximity.

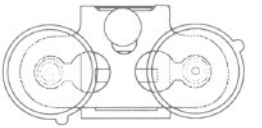
Specifications

General	
Dimensions	79 mm (W) x 117 mm (D) x 21 mm (H)
Weight:	99 g
Power Requirements:	13.8 VDC
Temperature Range:	Operating: -20°C to 70°C (-5°F to 160°F)
	Storage: -40°C to 85°C (-40°F to 185°F)
360° Laser Detector	
Receiver Type:	Pulse Laser Signal Receiver
Sensor Front End:	Convex Condenser Lens
Detector Type:	Pulse Width Discriminator
Receiver Bandwidth:	30 MHz
Spectral Response:	800 - 1100 nm
Alert Hold Time:	1 second
Radar Detector	
Receiver Type:	Double Conversion Superheterodyne
	Self-Contained Antenna
Detector Type:	Scanning Frequency Discriminator
Antenna Type:	Linear polarized, E vector vertical
Sensitivity:	X band = -114 dBm/cm2
	K band = -104 dBm/cm2
	Ka SuperWideband = -100 dBm/cm2
Frequency of Operation:	10.490 - 10.560 GHz (X band)
	24.040 - 24.260 GHz (K band)
	33.40 - 36.00 GHz (Ka SuperWideband)

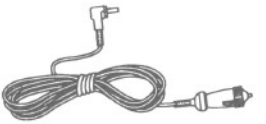
Specifications are subject to change without notice.

Optional Accessories & Replacement Parts

Owner's
Guide

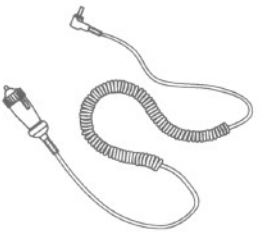


RDA640
Windshield
Clip



RDA249
Straight Cigarette
Lead

RDA248
Hard Wire Lead



RDA252
Coiled Cigarette
Lead

WARRANTY

1 YEAR WARRANTY

(Accessories are covered for 90 Days ONLY)

Note: Please keep your sales docket as it provides evidence of warranty. Warranty is only valid in the country where the product has been purchased.

WARRANTOR: Uniden New Zealand Limited

ELEMENTS OF WARRANTY: Uniden warrants to the original retail owner for the duration of this warranty, its SWS 2500NZ rader detector (hereinafter referred to as the Product), to be free from defects in materials and craftsmanship with only the limitations or exclusions set out below.

WARRANTY DURATION: This warranty to the original retail owner only, shall terminate and be of no further effect ONE (1) Year after the date of original retail sale. This warranty will be deemed invalid if the product is: (A) Damaged or not maintained as reasonable and necessary, (B) Modified, altered or used as part of any conversion kits, subassemblies, or any configurations not sold by Uniden. (C) Improperly installed, (D) Repaired by someone other than an authorized Uniden Repair Agent for a defect or malfunction covered by this warranty, (E) Used in conjunction with any equipment or parts or as a part of a system not manufactured by Uniden, (F) Installed, programmed or serviced by anyone other than an authorized Uniden Repair Agent, (G) Where the Serial Number label of the product has been removed or damaged beyond recognition.

PARTS COVERED: This warranty covers the product for One year. All accessories are covered for 90 Days only.

STATEMENT OF REMEDY: In the event that the product does not conform to this warranty at any time while this warranty is in effect, the warrantor at its discretion, will repair the defect or replace the product and return it to you without charge for parts and service. THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. THIS GUARANTEE IS IN ADDITION TO AND DOES NOT IN ANYWAY AFFECT YOUR RIGHTS UNDER THE CONSUMER GUARANTEE ACT.

WARRANTY CARD: If a warranty card has been included with this product then please fill it in and return to us within 14 days of purchase. Your name and the Serial number of the product will then be registered in our database and this will help us process your claim with greater speed and efficiency should you require warranty service.

PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY: In the event that the product does not conform to this warranty, the Product should be shipped or delivered, freight pre-paid, with evidence of original purchase (e.g., a copy of the sales docket), with a full description of the problem, to the warrantor at:

UNIDEN NEW ZEALAND LIMITED

150 Harris Road

East Tamaki, Auckland

Ph (09) 273 8383 FAX (09) 274 0009

Covered under one or more of the following U.S. patents:

4,622,553 4,698,632 4,709,407 4,791,420

4,831,498 5,315,302 5,469,287 5,579,012

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